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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/662,248

09/15/2003

Sean Timothy Crowley

AMKOR-036C

2413

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7590

10/13/2004

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EXAMINER

LE, THAO X

ART UNIT

PAPER NUMBER

2814

DATE MAILED: 10/13/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/662,248	Applicant(s) CROWLEY ET AL.	
	Examiner Thao X Le	Art Unit 2814	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
 - If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
 - If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
 - Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 20 January 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 14-31 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 14-31 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☒ Certified copies of the priority documents have been received in Application No. 09/687,876.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>01/16/04&01/20/04</u> | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. Claims 1-13 are cancelled in the amendment dated 09/15/03

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

3. Claims 14 is rejected under 35 U.S.C. 102(a) as being anticipated by Applicant Admitted Prior Art (APA)

Regarding claim 14, APA discloses a semiconductor package in fig. 1, comprising: a lead frame 51, spec page 6 line 10, comprising a plurality of leads 53 segregated into two sets, fig. 1, the leads 53 of each set being linearly aligned and arranged in spaced, generally parallel relation to each other such that each of the leads of one set extends in opposed relation to a respective one of the leads of the remaining set, fig. 1, each of the leads defining opposed, generally planar top 57 and bottom sides 58, spec. page 6 line 14 and 18; a semiconductor chip 54 partially overlapping and attached to the top side 57 of at least one of the leads 53 of each of the sets, the semiconductor chip being electrically connected to at least one of the leads; and a sealing material 59 at least partially encapsulating the lead frame 51 and the semiconductor chip 54 such that the bottom side of each of the leads is exposed within the sealing material, fig. 1, specification page 6 lines 5-20.

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4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

5. Claims 14-31 are rejected under 35 U.S.C. 102(e) as being anticipated by US 6157074 to Lee.

Regarding claim 14, Lee discloses a semiconductor package in fig. 5-7, comprising: a lead frame 1, fig. 5 column 4 line 7, comprising a plurality of leads 7/6, column 4 lines 15-16, segregated into two sets, fig. 7, the leads of each set being linearly aligned and arranged in spaced, generally parallel relation to each other such that each of the leads of one set extends in opposed relation to a respective one of the leads of the remaining set, fig. 7, each of the leads defining opposed, generally planar top (top surface of 6) and bottom sides (bottom surface of 7), fig. 4, a semiconductor chip 3, column 4 line 11, partially overlapping and attached to the top side of at least one of the leads 6 of each of the sets, the semiconductor chip being electrically connected to at least one of the leads; and a sealing material 13, column 4 line 17, at least partially encapsulating the lead frame 1 and the semiconductor chip 3 such that the bottom side of each of the leads 7 is exposed within the sealing material, fig. 7.

Regarding claim 15, Lee discloses the semiconductor package wherein: each of the leads 6 further defines an inner end 6 and a notched surface 9, column 4 line 23, which is disposed in opposed relation to the bottom side and extends to the inner end; each of the leads 6 has a first thickness between the top and bottom sides which exceeds a second thickness between the

bottom side and the notched surface, and the semiconductor chip 3 partially overlaps and is attached to the notched surface 9 of at least one of the leads 6 of each of the sets, fig. 7.

Regarding claim 16, Lee discloses the semiconductor package wherein the semiconductor chip 3 is electrically connected to the topside of at least one of the leads via a conductive wire 10, column 4 line 34, which is covered by the sealing material 13.

Regarding claims 17-20, Lee discloses the semiconductor package wherein the semiconductor chip 3 is electrically connected to the notched surface 9 of at least one of the leads 6 via a solder ball 5, column 4 line 14, which is covered by the sealing material 13, wherein the notched surfaces 9 of the leads 6 extend in generally co-planar relation to each other, wherein each of the leads further defines an inner end and a notched surface which is disposed in opposed relation to the top side and extends to the inner end 6; and each of the leads has a first thickness between the top and bottom sides which exceeds a second thickness between the top side and the notched surface 9, wherein the semiconductor chip 3 is electrically connected to the top side of at least one of the leads via a conductive wire 10 which is covered by the sealing material 13.

Regarding claims 21-23, Lee discloses the semiconductor package wherein each of the leads 7 further defines an outer end; and the sealing material 13 encapsulates the lead frame such that the outer end 7 of each of the leads is exposed within the sealing material 13, wherein the bottom sides of the leads 7 extend in generally co-planar relation to each other, wherein the top sides of the leads extend in generally co-planar relation to each other, fig. 7.

Regarding claim 24, Lee discloses a lead frame 1 in fig. 5 comprising a peripheral tie bar 2, column 4 line 11, and a plurality of leads 6/7, column 4 lines 15-16, connected to the tie bar 2 and segregated into two sets, fig. 7, the leads of each set being linearly aligned and arranged in

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spaced, generally parallel relation to each other such that each of the leads of one set extends in opposed relation to a respective one of the leads of the remaining set, each of the leads defining opposed, generally planar top and bottom sides; an inner end 6, column 4 line 16, and a notched surface 9, column 4 line 23, which is disposed in opposed relation to the bottom side and extends to the inner end, fig. 7, each of the leads having a first thickness between the top and bottom sides which exceeds a second thickness between the bottom side and the notched surface, fig. 7.

Regarding claims 25-27, Lee discloses the lead frame wherein the notched surfaces 9 of the leads 9 extend in generally co-planar relation to each other wherein the bottom sides of the leads extend in generally co-planar relation to each other wherein the top sides of the leads extend in generally co-planar relation to each other, fig. 7.

Regarding claim 28, Lee discloses a lead frame 1, fig. 5, comprising: a peripheral tie bar 2, and a plurality of leads 6/7 connected to the tie bar 2 and segregated into two sets, fig. 7, the leads of each set being linearly aligned and arranged in spaced, generally parallel relation to each other, fig. 7, such that each of the leads of one set extends in opposed relation to a respective one of the leads of the remaining set, each of the leads defining opposed, generally planar top and bottom sides; an inner end 6; and a notched surface 9 which is disposed in opposed relation to the top side and extends to the inner end; each of the leads having a first thickness between the top and bottom sides which exceeds a second thickness between the bottom side and the notched surface 9, fig. 7.

Regarding claims 29-31, Lee discloses the lead frame wherein the notched surfaces of the leads extend in generally co-planar relation to each other, wherein the bottom sides of the leads

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extend in generally co-planar relation to each other, wherein the top sides of the leads extend in generally co-planar relation to each other, fig. 7.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thao X Le whose telephone number is (571) 272-1708. The examiner can normally be reached on M-F from 8:00 AM - 4:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wael M Fahmy can be reached on (571) 272 -1705. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Thao X. Le
06 Oct 2004

LONG PHAM
PRIMARY EXAMINER